



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,898	10/21/2005	Shusaku Takagi	05702/HG	9904
1933 7590 12/07/2009 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708				
EXAMINER FOGARTY, CAITLIN ANNE				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
12/07/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,898

Applicant(s)

TAKAGI ET AL.

Examiner

CAITLIN FOGARTY

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI.08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Interval Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Status of Claims

1. Claims 1 – 8 are pending where claims 1 and 5 have been amended.

Status of Previous Objections and Rejections

2. The objection to claim 5 is withdrawn in view of the amended claim 5 filed 8/3/2009.

The 35 U.S.C. 103(a) rejection of claims 1 – 8 as being unpatentable over JP 2002-226937 has been withdrawn in view of the amended claims filed 8/3/2009.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English machine translation of WO 01/09396 (hereinafter WO '396).

With respect to instant claim 1, p. 1 paragraphs 12 and 13 and p. 2 paragraph 5 of the English machine translation of WO '396 disclose a high tensile cold-rolled steel sheet with an overlapping composition as seen in the table below.

Element	Instant Claim 1 (mass %)	WO '396 (mass %)	Overlapping Range (mass %)
C	0.04 – 0.13	0.05 – 0.2	0.05 – 0.13
Si	0.3 – 1.2	≤ 1.0	0.3 – 1.0
Mn	1.0 – 3.5	0.8 – 2.0	1.0 – 2.0
P	≤ 0.04	≤ 0.1	≤ 0.04

S	≤ 0.01	≤ 0.015	≤ 0.01
Al	0.02 – 0.07	0.02 – 0.4	0.02 – 0.07
N	≤ 0.005	≤ 0.005	≤ 0.005
Fe + Impurities	Balance	Balance	Balance
Cr	----	0.25 – 1.0	----
B	----	0.002 – 0.01	----

The steel sheet of WO '396 satisfies the claim limitation "consisting essentially of"

because it does not require any additional elements that are not recited in the instant claims. The presence of 0.25% Cr and 0.002% B are impurity levels and therefore would not materially affect the basic and novel characteristics of the claimed invention. WO '396 also teaches in p. 1 paragraph 12 that the steel sheet has a microstructure containing 4-20% martensite where the remainder is ferrite which overlaps with the instant claimed ranges of martensite and ferrite.

WO '396 differs from instant claim 1 because it does not specifically teach the ratio of intervals of the martensite in the rolling direction to those in the sheet thickness direction or the nano strength of the martensite. However, since the cold-rolled sheet of WO '396 has an overlapping composition with the composition recited in instant claim 1 and the steel sheet of WO '396 is made using essentially the same process as the instant invention as discussed below for instant claim 5, one of ordinary skill in the art would have expected the steel sheet of WO '396 to inherently have a similar ratio and nano strength of martensite. See MPEP 2112 IV and V.

In regards to instant claim 2, p. 1 paragraph 12 of WO '396 teaches that the steel sheet may further comprise 0.25-1.0 mass% Cr and 0.002-0.01 mass% B which both overlap with the compositional ranges of Cr and B recited in the instant claim.

Regarding instant claims 3 and 4, p. 2 paragraph 4 of WO '396 discloses that the steel sheet may additionally comprise a Ti content of at least $2.8 \times A_N$ where A_N = mass% of N. Therefore, the steel sheet of WO '396 may comprise at least 0.014 mass% Ti, for example, when N is 0.005 mass% which is within the compositional range of Ti recited in instant claims 3 and 4.

With respect to instant claim 5, p. 1 paragraphs 12 and 13, p. 2 paragraphs 5, 13, and 14, and p. 3 paragraphs 1 and 2 of WP '396 teach a method for manufacturing a high tensile cold-rolled steel sheet. The method includes hot-rolling a steel slab with an overlapping composition with the steel recited in instant claim 5, as discussed above for instant claim 1, into a steel sheet. Then, the sheet is coiled at a temperature of 620°C which is within the coiling temperature range recited in instant claim 5. Next, cold-rolling is performed on the coiled steel sheet. Then, the cold-rolled sheet is annealed by heating to a temperature between 750°C and 870°C. Finally, the annealed sheet is cooled to, for example, 300°C, at a cooling rate of 20°C/s to 100°C/s where the cooling temperature and range are within the ranges recited in instant claim 5. WO '396 also teaches in p. 1 paragraph 12 that the steel sheet has a microstructure containing 4-20% martensite where the remainder is ferrite which overlaps with the instant claimed ranges of martensite and ferrite. The steel sheet of WO '396 satisfies the claim limitation "consisting essentially of" because it does not require any additional elements that are not recited in the instant claims. The presence of 0.25% Cr and 0.002% B are impurity levels and therefore would not materially affect the basic and novel characteristics of the claimed invention.

WO '396 differs from instant claim 5 because it does not specifically teach the cold-rolling reduction range. However, it would have been obvious to one of ordinary skill in the art to cold roll the steel sheet to any desired thickness depending on the intended use of the steel sheet. WO '396 also differs from instant claim 5 because it does not teach the formula of the annealing temperature range recited in claim 5. However, the annealing temperature range of 750°C-870°C disclosed by WO '396 overlaps with the specific examples of annealing temperature ranges recited in Table 2-2 of the instant application. Therefore, in the absence of factual evidence demonstrating the criticality of the annealing temperature formula, WO '396 teaches annealing temperatures that satisfy the formula recited in claim 5. WO '396 also differs from instant claim 5 because it does not specifically teach the ratio of intervals of the martensite in the rolling direction to those in the sheet thickness direction or the nano strength of the martensite. However, since the cold-rolled sheet of WO '396 has an overlapping composition with the composition recited in instant claim 5 and the steel sheet of WO '396 is made using essentially the same process as the instant invention as discussed below for instant claim 5, one of ordinary skill in the art would have expected the steel sheet of WO '396 to inherently have the recited ratio and nano strength of martensite. See MPEP 2112 IV and V.

In regards to instant claim 6, p. 1 paragraph 12 of WO '396 teaches that the steel sheet may further comprise 0.25-1.0 mass% Cr and 0.002-0.01 mass% B which both overlap with the compositional ranges of Cr and B recited in the instant claim.

Regarding instant claims 7 and 8, p. 2 paragraph 4 of WO '396 discloses that the steel sheet may additionally comprise a Ti content of at least $2.8 \times A_N$ where A_N = mass% of N. Therefore, the steel sheet of WO '396 may comprise at least 0.014 mass% Ti, for example, when N is 0.005 mass% which is within the compositional range of Ti recited in instant claims 7 and 8.

Since the claimed temperature and compositional ranges of claims 1 – 8 either overlap or are within the ranges disclosed by WO '396, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed temperature ranges and steel sheet composition from the temperature ranges and steel sheet composition disclosed by WO '396 because WO '396 teaches the same utility (i.e. lightweight structural materials) in the whole disclosed range.

Response to Arguments

6. Applicant's arguments with respect to claims 1 – 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF